Positive Train Control (PTC) Full Working Group
November 9, 2000 - Jacksonville, FL

Note: All of the PowerPoint presentations will be posted on the Volpe Website at:
http://imsserver.volpe.dot.gov.   There are no user ID's or passwords required.
Filenames and their association with the presenters are as follows:

No.	Presenter & Organization	Filename (all Adobe PDF format)
1	Victor Grapone - LIRR	LIRR 11-9-00
2	Dr. Ted Giras - UVA Dr. Tom Raslear - FRA	Safety Case DTC Safety Case Evidence
3	Dilip Patel & Larry Light - ATK	ACSES_Class
4	Denise Lyle - CSX	CBTM Presentation_11_9_00
5	Rich McCord - FRA Larry Light - ATK	ITCS_11-09-00
6	Bob Gallamore - AAR	NAJPTC Update 11-00
7	Warren Klinck - Lockheed Martin	Lockheed PTC_IDOT_11-00
8	Chris Goeren - Lockheed Martin	Lockheed HMI_11_8_00
9	Howard Moody - AAR	TCStandards_Moody_1100
10	Rich McCord - FRA	PTC Accidents 1999&2000

November 9:   Full Working Group Meeting convened at 8 a.m.

• Dean Hollingsworth called to order the Full Working Group at 8 a.m. with a safety briefing.

• Ted Bundy asked the Full Working Group to review the minutes of their June 2000 meeting.
There were no comments and the task force voted to accept the minutes as they stand. Ted
distributed a group roster which included all data information for all in attendance to review and
sign.

• Victor Grapone gave a briefing on the Long Island Rail Road Project, which is a Communication
Based Train Control (CBTC) system. He said LIRR expects this system to eventually replace the
existing signal system.

Rick Inclima ask if the CBTC met the 3 core functions and the answer was yes. He also asked
whether MW vehicles would be equipped, how broken rail protection might work without track
circuits, and how switch point protection would be implemented.

Mr. Grapone said the switch point protection would be at least at the level of current circuit technology, and there were reviewing ways to provide for broken rail protection, particularly acoustical technology and possibly the use of track circuits that wouldn't have to shunt for train presence.

Bob Gallamore asked if the non-passenger trains are freight trains and did LIRR plan to equip these trains. Mr. Grapone said that their were very few freight trains and the others were LIRR work trains.

Tim DePaepe asked how they intend to protect roadway workers, and if the system would provide protection for speed restrictions. Mr. Grapone said that these protections would be accomplished via authority data.

Ted Bundy asked if Mr. Grapone would be willing to send the LIRR RFI for this project to all of the PTC Working Group members. Mr. Grapone said he would, and Ted said he would filter out all of the Government members and send a mailing list to Mr. Grapone.

• Dr. Ted Giras briefed the group on the ASCAP Team meeting that was held yesterday. The focus of the meeting was: how the human factors are being presented. He said development would be a two-part approach which includes Part A: Framework, and Part B: Risk. Will start the validation and verification of the system. You can not directly relate one accident for every 20 years in PTC preventable accidents.

• Dr. Thomas Raslear, FRA Railroad Development, briefed the group on the Human Factors Team meeting yesterday. Quantifying the human risks factors. Need a verification for this type of model (ASCAP).

• Bob Harvey asked Dr. Giras how essential is the possibility of an accident every 20 years to the model.

Dr. Raslear said he doesn't think the figure of 1 accident for every 20 years is realistic. He said that FRA's accident data for 1997, excluding yard accidents, show that .23 human factors accidents occurred per million train miles. He said that UK studies had shown there is one accident for every 330 errors. There is a sequence of events or errors that actually occur before an accident or a mishap.

• GE Harris stated that if the human factor error rate is the figure that the model is based on then we need to get a better handle on the error rate.

• Grady Cothen said he thought the group could get a better representation of the number of errors by having a team conduct a review of about 30 safety critical rules and tie them into a comprehensive review of the Part 217 operational testing records railroads are required to retain. He said the same team could review both human factor related accountable and reportable accidents/incidents required under Part 225. Since accountable accidents must be recorded by the railroad but aren't required to be reported to FRA, we would be able to get a broader picture of what exists.

- Dilip Patel and Larry Light briefed the group on the progress of the ATK Automatic Civil Speed Enforcement System (ACSES) Project.

- Denise Lyle gave an update on CSX Communications Based Train Management (CBTM) which included the schedules and preliminary results.

- Rich McCord and Larry Light gave an update on the ATK ITCS Project. Phase 1 started March 20, 1999, freight started on August 10, all equipment is operational. Phase 2 is imminent which will require FRA approval of operating rules, configuration management plan, approval of freight braking algorithm, rules training, follow-up training for operators and train dispatchers and testing outside of the testbed. Phase 2 is to run 90 days by waiver 79 air brake cut-in. Phase 3 is 90 mph, for 300 days.

Adjourn for lunch until 1 p.m.

- Bob Gallamore gave the group a program status of the North American Joint (Illinois) Project. The project consists of the following:
  Management Committee - FRA, IDOT and AAR
  Prime Contractor - Transportation Technology Center, Inc. (TTCI)
  Systems Engineer - ARINC
  Systems Integrator - Lockheed Martin
  Other Contractors - Eastern Project, Simulation Tools, etc.

- Warren Klinck, Lockheed Martin, briefed the group on the IDOT PTC Safety Program Overview which includes:
  System Requirements
  PTC System Safety Assurance Process
  Hazard and Risk Analyses
  Safety Critical System Development
  Fault Tolerance
  Software Safety
  Formal Methods
  Verification, Validation and Testing
  IDOT PTC Product Safety Plan (PSP); and
  Approval

- Chris Goeren, Lockheed Martin, briefed the group on the IDOT Process for Human Machine Interface (HMI) Development which includes:
  Understand the Users Need
  Allocate HMI Components
  Design Prototyping
  Usability Group Feedback
  Iterative Process
  Basic HMI Principles as Applied to PTC
  Iterative HMI Process
  Lockheed HMI related PTC Activity

The group discussed a time and place for the next PTC Working Group Meeting which will be a one day meeting on Wednesday, March 28, 2001, in Las Vegas, NV. The ASCAP and Human Factors Teams will meet on Tuesday March 27 from 1p.m. - 5 p.m. If FRA can not obtain sleeping rooms/meeting space in Las Vegas then FRA will decide the alternate city.

• Howard Moody gave a presentation on the Train Control Standards Update.

• Rich McCord briefed the group on the PTC 1999-2000 Accidents investigated by FRA.

• Grady Cothen discussed FRA's process of rulemaking for the PTC Standards. On September 14, the full RSAC unanimously approved the NPRM. It will be published from November to December 2000 in the Federal Register after which there will be a 90 day comment period. The PTC Standards Task Force Working Group will submit a final rule, subject to whether or not an adequate tool set for V&V was available. If considered by OMB to be non-significant it will move quickly, if not then it will be stalled. Clearly we will be in the year 2001 before FRA will issue a final rule.

Meeting adjourned at 3:30 p.m.